

Claims:

1. A process for preparing enantiomer-enriched α -hydroxycarboxylic acids or enantiomer-enriched α -hydroxycarboxylic amides starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase or a nitrile hydratase.
- 5 2. A process for preparing enantiomer-enriched α -hydroxycarboxylic acids starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase.
- 10 3. A process for preparing enantiomer-enriched α -hydroxycarboxylic amides starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrile hydratase.
- 15 4. Process according to one or more of Claims 1 to 3, characterised in that the oxynitrilase of an organism or of the constituents of a plant selected from the group consisting of Sorghum bicolor, Hevea brasiliensis, Mannihot esculenta and almond kernels is employed.
- 20 5. Process according to one or more of Claims 1 and/or 2, characterised in that the nitrilase of an organism selected from the group consisting of Rhodococcus strains or of Alcaligenes faecalis is employed.
- 25 6. Process according to one or more of Claims 1 and/or 3, characterised in that the nitrile hydratase of an organism selected from the group consisting of Rhodococcus spec., Rhodococcus rhodochrous and Rhodococcus erythropolis is employed.
- 30 7. Process according to one or more of the preceding claims,

characterised in that
the reaction is implemented in an aqueous medium at a
pH value of 6.0-9.0.

8. Process according to one or more of the preceding
5 claims,
characterised in that
the reaction is implemented within a temperature
interval of 20-40 °C.
9. An enzymatic reaction system exhibiting an
10 oxynitrilase, a nitrilase or a nitrile hydratase,
water, a cyanide donor and an aldehyde or a ketone.
10. A whole-cell catalyst exhibiting a cloned gene for an
oxynitrilase and a nitrilase or a nitrile hydratase.
11. Whole-cell catalyst according to Claim 9,
15 characterised in that
in the case where a nitrile hydratase is present said
whole-cell catalyst likewise exhibits a cloned gene
for an amidase.